

SYSTEM AND METHOD FOR PROVIDING FREQUENCY DOMAIN
SYNCHRONIZATION FOR SINGLE CARRIER SIGNALS

5 ABSTRACT OF THE DISCLOSURE

There is disclosed an improved system and method for providing frequency domain synchronization for a single carrier signal such as a vestigial sideband signal. The system comprises a synchronization circuit that is capable of obtaining a coarse
10 frequency estimate of the single carrier signal and a fine frequency estimate of the single carrier signal. The system also comprises a three state machine for obtaining an accurate frequency estimate from three separately obtained frequency estimates. The system also comprises a DC estimator circuit that is capable of
15 providing a time domain DC estimate. The system provides a pilot carrier recovery circuit for single carrier signals that has a linear transfer function.